

48

Date: Monday, 10/22/2007 3:59:31 PM  
User: Kim Johnston

## Process Sheet

Customer : CU-DAR001 Dart Helicopters Services Drawing Name : 206L FWD X-TUBE  
Job Number : 35305  
Estimate Number : 10553  
P.O. Number : N/A Part Number : D206667103 *Not Blue*  
This Issue : 10/22/2007 S.O. No. : N/A Drawing Number : D206-667-143 REV B  
Prsht Rev. : NC Project Number : N/A  
First Issue : N/A Type : LANDING GEAR Drawing Revision : N/A  
Previous Run : 34140 Material : N/A  
Due Date : 11/30/2007 Qty: 1 Um: Each  
Written By :  
Checked & Approved By : *9071023*  
Comment : Est Rev: 05.09.01 Add holes for compatibility with Bell  
Skidtubes KJ/JLM

## Additional Product

Job Number:



Seq. #: Machine Or Operation: Description :

1.0 DC DOCUMENT CONTROL

*FS 07.07.26*

Comment: DOCUMENT CONTROL

Photocopy bluefile and create labels as per PPP D206-667-103 CHG002

*6 07/11/02*

2.0 D6002115 Crosstube material



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)

Pick:

Qty Part number Description Batch

1 D6002-115 Crosstube *B23966*

Check OD = 2.250"; ID = 1.750"

*07/11/02**(P)*

3.0 MORI SEIKI MORI SEIKI CNC LATHE LARGE



Comment: MORI SEIKI CNC LATHE LARGE

1-Fill tube with sand &amp; install plugs DT8534 on both ends as per Folio FA087

2-Turn first side as per Folio FA087

3-Deburr &amp; Inspect for surface damage. Repair damage within limits as per Dwg D206-667-143.

*07/11/02**(1)*

4.0 QC1 INSPECT ALL DIM TO DIM SHEET



Comment: INSPECT ALL DIM TO DIM SHEET

*07/11/02**(1)*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes ☒ No ☐ DQA: DD Date: 07/11/27  
 QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
07.11.02	3	Some OD dims are under tolerance by as much as 0.005"	UP 07.11.02 per QSI 042	PART ACCEPTABLE, MARGINS ARE STILL POSITIVE SEE ATTACHED CALL.	ml 07/11/02	✓ 07/11/22	UP 07.11.02 per QSI 042	✓ 07/11/27

NOTE: Date & initial all entries

Date: Monday, 10/22/2007 3:59:31 PM  
User: Kim Johnston

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 206L FWD X-TUBE

Job Number: 35305

Part Number: D206667103BL

Job Number:



Seq. #:

Machine Or Operation:

Description :

5.0

MORI SEIKI

MORI SEIKI CNC LATHE LARGE



Comment: MORI SEIKI CNC LATHE LARGE

1-Turn second side as per Folio FA087

2-Deburr & Inspect for surface damage. Repair damage within limits as per Dwg D206-667-143.

3-Remove sand and plugs

4-Scribe part # and batch # using vibrating stylus as per Dwg D206-667-143

Inside of Cuff(Donot engrave on outside of tube)

*ML 07/11/02*

①

6.0

QC1

INSPECT ALL DIM TO DIM SHEET



Comment: INSPECT ALL DIM TO DIM SHEET

*ML 07/11/02*

①

7.0

QC8

SECOND CHECK



Comment: SECOND CHECK

*J.F. 07/11/13*

①

8.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

*AWM 07-11-13*

1-Polish entire outside surface of crosstube

9.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

*DD 7-11-13*

10.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Chemical Conversion Coat as per QSI 005 4.1

*AWM 07-11-14*

11.0

BENDING

BENDING MACHINE



Comment: BENDING MACHINE

Bend tube as per Dwg D206-667-143 using CNC bender program 206L-fw and Folio FT017

*EL 7-11-14*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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User: Kim Johnston

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 206L FWD X-TUBE

Job Number: 35305

Part Number: D206667103BL

Job Number:



Seq. #:

Machine Or Operation:

Description:

12.0

QC15

DIMENSIONAL CHECK OF X-TUBES



Comment: DIMENSIONAL CHECK OF X-TUBES

*7-11-15* ①

13.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Drill pilot holes in tube using drill Jig DT8541 & DT8542 as per Dwg D206-667-143. Drill all (3) top holes.

2-Drill and Ream all holes in tube to finish size using drill Jig DT8541 & DT8542 as per Dwg D206-667-143. Check dimensions between holes on all four sides.

3-Flip tube and switch drilling Jigs from right to left, left to right. Locate Jigs off existing holes using "T" pins.

4-Drill pilot holes using drill Jig DT8541 & DT8542 as per Dwg D206-667-143. Drill only the top (2) holes.

5-Drill & ream the top (2) holes to finish size using drill Jig DT8541 & DT8542 as per Dwg D206-667-143

6-Drill Fwd rivet holes using drill Jig DT8787FWD as per Dwg D206-667-143. Note: Fwd side has 3x top holes.

7-Drill Aft rivet holes using drill Jig DT8787AFT as per Dwg D206-667-143.

8-C'sink holes as per Dwg D206-667-143. Allow rivet to sit below surface to compensate for paint.

9-Deburr & Inspect for surface damage. Repair damage within limits as per Dwg D206-667-143

*PTO*

*502*  
*7-11-15*

*Jb 7-11-16*

14.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Chemical Conversion Coat as per QSI 005 4.1

*JD 7-11-16*

15.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

*7-11-16* ①

16.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

*7-11-16* ①

# Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes ☒ No ☐ DQA: 12 Date: 07/11/15  
 QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
07-11-15	13-1	The height is un-even by .100"	<u>AS1042</u>	even tube cut by drilling side B to nominal, and side A to .680"	<u>SR</u> 7-11-15	<u>07-11-19</u>	<u>AS1042</u>	<u>07-11-15</u>

NOTE: Date & initial all entries

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## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 206L FWD X-TUBE

Job Number: 35305

Part Number: D206667103BL

Job Number:



Seq. #:

Machine Or Operation:

Description :

17.0

OUTSIDE SERV.10

OUTSIDE SERVICES -LG



Comment: Sub-Contracting OUTSIDE SERVICES

Liquid Penetrant Inspection as per QSI 038Or

Issue P/O: 5068 LPI as per ASTM 1417

Level 2 Attach copy of NDT results to work order

CL 07/11/19 ①

CL 7/11/19

18.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Inspect for transit damage

Ensure copy of NDT results attached to work order.

N/A

19.0

QC6

DIMENSIONAL CHECK



Comment: Inspect for damage & ensure results are as per Dwg D206-667-103

CL 11-19 ①

20.0

SPRAY PAINTING

SPRAY PAINTING



Comment: SPRAY PAINTING

1-Prime inside and outside crosstube as per QSI 005 4.2

2-Paint outside crosstube ~~DEL FLEET BLUE~~

3-CLEAR WITH ~~DEL FLEET~~

ISSUE P.O TO ATELIER DEBOSSSELAGE

White  
Imron

ml 07 11 19 ①

ml 07 11 21 ①

21.0

QC14

INSPECT SPRAY PAINT



Comment: Inspect Spray Paint

Wrap in plastic bag to protect from scratches

RT 07-11-22

22.0

D2856400

Abrasion Strip



Comment: Qty.: 1.2138 f(s)/Unit Total : 1.2138 f(s)

Pick:

Qty Part number Description

Batch

2 D2856-400(Cut to 6.94") Abrasion Strip

34642

RT 07-11-22

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



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## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 206L FWD X-TUBE

Job Number: 35305

Part Number: D206667103BL

Job Number:



Seq. #:

Machine Or Operation:

Description :

23.0

D2873043

Nut Plate Assembly



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Pick:

Qty Part number Description Batch

2 D2873-043

Nut Plate

33422

ml 07 11 20

24.0

D2873045

Nut Plate Assembly



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Pick:

Qty Part number Description Batch

2 D2873-045

Nut Plate

34077

ml 07 11 20

25.0

D28911

Support 2.25 dia



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Pick:

Qty Part number Description Batch

2 D2891-1

Support

29108

RT 07-11-22

26.0

MS20601AD4W8

RIVET



Comment: Qty.: 14.0000 Each(s)/Unit Total : 14.0000 Each(s)

Pick:

Qty Part number Description Batch

14 MS20601AD4W8 Rivet

105057

ml 07 11 20

27.0

MS2192020

Clamp (per MIL-DTL-8783C)



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)

Pick:

Qty Part number Description Batch

4 MS21920-20

Clamp

102787

RT 07-11-22

28.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Install abrasion strips as per QSI 035 using DT8579. Note: (2) Aft holes should be facing up.

RT 07-11-22

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Monday, 10/22/2007 3:59:31 PM  
User: Kim Johnston

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 206L FWD X-TUBE

Job Number: 35305

Part Number: D206667103

Job Number:



Seq. #:

Machine Or Operation:

Description :

2-Install supports and clamps as per Dwg D4206-667-143. Torque clamps to 80-100 in lb

25 07-11-22

3-Install nut plates as per Dwg D206-667-143. Touch-up rivet heads with Iron paint.

ml 07 11 20 0

29.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

5 7/11/27 SC

30.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Pick Packing Kit

31.0

AN532A

Bolt



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)

Bolt

Batch: M104936

SC

32.0

MS21042L5

Nut



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)

Nut

Batch: M105430

SC

33.0

AN57A

Bolt



Comment: Qty.: 10.0000 Each(s)/Unit Total : 10.0000 Each(s)

Pick:Packing Kit

Qty Part number

Description Batch

10 AN5-7A

Bolt M105433

SC

34.0

AN530A

BOLT



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)

Pick:Packing Kit

Qty Part number

Description Batch

4 AN5-30A

Bolt M103641

7/11/27 SC (14)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes ☐ No ☒ DQA: DD Date: 01/11/27  
 QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Monday, 10/22/2007 3:59:31 PM  
User: Kim Johnston

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 206L FWD X-TUBE

Job Number: 35305

Part Number: D206667103

Job Number:



Seq. #:

Machine Or Operation:

Description :

35.0

AN960JD516

Washer



Comment: Qty.: 18.0000 Each(s)/Unit Total : 18.0000 Each(s)

Pick:Packing Kit

Qty Part number Description Batch

18 AN960JD516 Washer *M109156*

*7/11/27 SD (x)*

36.0

QC4

INSPECT 100% KITS FOR COMPLETENESS



Comment: INSPECT 100% KITS FOR COMPLETENESS

*7/11/27 (x)*

37.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and pack for shipping as per PPP D206-667-103

Location:

PPP Rev: *B*

*W*

*KS 7/11/27*

*(x1)*

38.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

*7/11/27*

Job Completion



*W 7/11/27*

**Dart Aerospace Ltd**

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_  
 QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

<b>DART AEROSPACE LTD</b>	<b>Work Order:</b> 35305
<b>Description:</b> Crosstube Assembly (206L High Fwd)	<b>Part Number:</b> D206-667-143
<b>Inspection Dwg:</b> D206-667-143 <b>Rev:</b> B	<b>Page 1 of 1</b>

### FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article
 ☐ Prototype

Inspection Sheet	Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
SIDE A	2.240	+0.005/-0.000	2.240	✓			
	1.982	+0.005/-0.000	1.982	✓			
	2.019	+0.005/-0.000	2.020	✓			
	2.058	+0.005/-0.000	2.058	✓			
	2.097	+0.005/-0.000	2.097	✓			
	2.136	+0.005/-0.000	2.133	✓	—		
	2.176	+0.005/-0.000	2.176	✓	—		
	2.201	+0.005/-0.000	2.197	✓	—		
	0.125	+/-0.010	0.130	✓			
	0.400 x 30°	+/-0.010	0.400x30°	✓			
	R0.063	+/-0.010	R0.063	✓			
	R0.500	+/-0.010	0.560	✓			
	4.438	+/-0.030					
SIDE B	104.98	+/-0.020	104.980	✓			
	2.240	+0.005/-0.000	2.244	✓			
	1.982	+0.005/-0.000	1.986	✓			
	2.019	+0.005/-0.000	2.024	✓			
	2.058	+0.005/-0.000	2.062	✓			
	2.097	+0.005/-0.000	2.102	✓			
	2.136	+0.005/-0.000	2.140	✓			
	2.176	+0.005/-0.000	2.179	✓			
	2.201	+0.005/-0.000	2.204	✓			
	0.125	+/-0.010	0.125	✓			
	0.400 x 30°	+/-0.010	0.400x30°	✓			
	R0.063	+/-0.010	R0.063	✓			
	R0.500	+/-0.010	R0.500	✓			
	4.438	+/-0.030	4.433	✓			

<b>Measured by:</b> <i>gmk</i>	<b>Audited by:</b> <i>J.F.</i>	<b>Prototype Approval:</b>	N/A
<b>Date:</b> 07/11/02	<b>Date:</b> 07/11/13	<b>Date:</b>	N/A

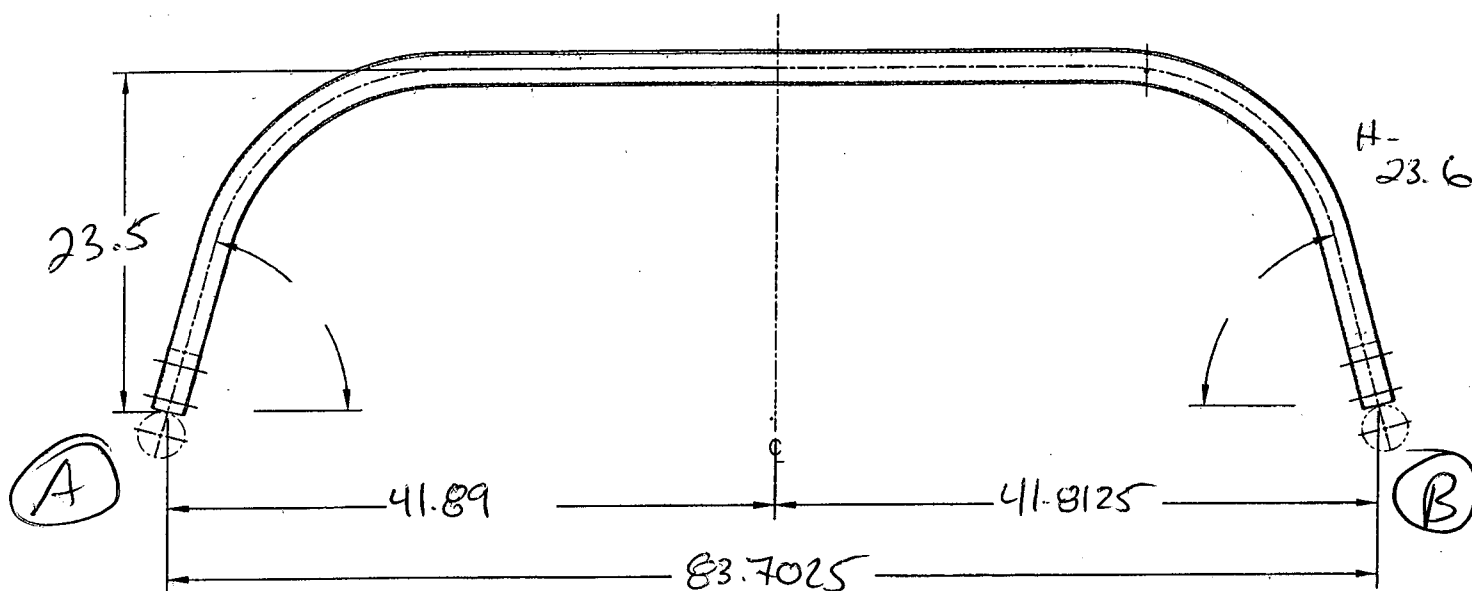
Rev	Date	Change	Revised by	Approved
A	04.05.06	New Issue (P/O D206-667-103)	KJ/RF	
B	06.03.09	Dwg Rev updated	KJ/JLM <i>JA</i>	<i>JA</i>





DART AEROSPACE LTD		Work Order:	35305
Description: Crosstube High Fwd (206L)		Part Number:	D206-667-103
Inspection Dwg: D206-667-143 Rev: B		Page 1 of 1	

Required Dimension	Min	Max
Height	23.46	23.58
1/2 Span	41.86	41.98
Angle	54	56
Total Span	83.72	83.96



Comments
<del>Drill</del> Height is uneven by 0.100"

QC15 Inspection	05/042
Date	07-11-15

Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM	<i>[Signature]</i>



DESIGN PH	DRAWN BY PH	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED HDS	APPROVED HDS	DRAWING NO. D206-667-143	REV. B SHEET 1 OF 3
DATE 05.07.26		TITLE CROSSTUBE ASS'Y (206L HIGH FWD) NTS	
A	00.11.17	NEW ISSUE	
B	05.07.26	ADD HOLES AND NUT PLATES FOR COMPATABILITY WITH BHT/AA SKIDTUBES	

RELEASED  
05-07-26 HDS

UNDER REVIEW

05-08-10 PH

re-draw detail F  
PH

07.05.02

Qty	Part Number	Description
X	D206-667-143	CROSSTUBE ASSEMBLY (206L HIGH FWD)
1	D6002-115	CROSSTUBE
2	D2873-043	NUT PLATE
2	D2873-045	NUT PLATE
2	D2856-400-694	ABRASION STRIP
2	D2891-1	SUPPORT
14	MS20601AD4W8	RIVET (OR NAS9302B-4-8)
4	MS21920-20	CLAMP

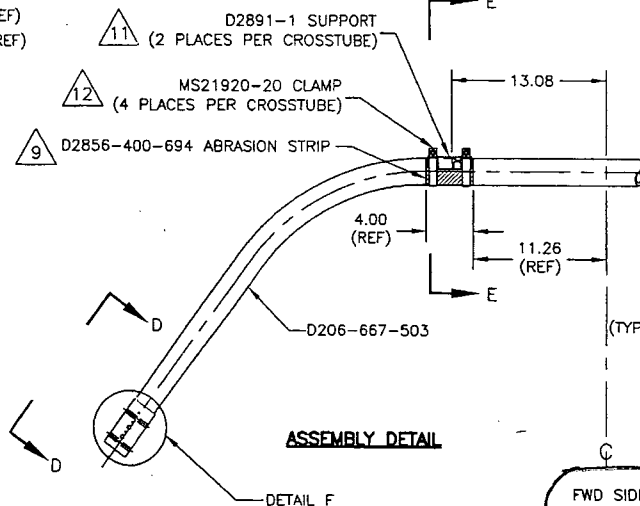
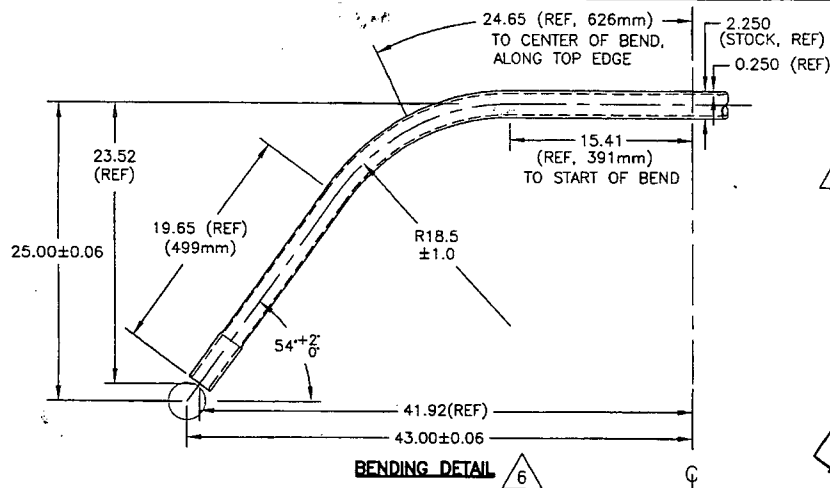
#### GENERAL NOTES:

- 1) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 2) MATERIAL: MANUFACTURED FROM D6002-115  
FINISHED LENGTH = 104.98±0.020
- 3) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2  
PAINT OUTSIDE PER DART QSI 005 4.2
- 4) PART IS SYMMETRIC ABOUT CENTERLINE.
- 5) RUN-OFF PART. BLEND OUT EDGE LONGITUDINALLY, TRANSITION SHOULD BE SMOOTH.
- 6) BEND PROGRESSIVELY WITH A MINIMUM OF 10 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D.
- 7) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- 8) SCRIBE DART PART NUMBER AND BATCH NUMBER IN THIS AREA WITH VIBRATING STYLUS.
- 9) INSTALL D2856-400-694 ABRASION STRIP WITH A 0.13 (REF) GAP ON BOTTOM SIDE OF CROSSTUBE, CENTERED OPPOSITE D2891-1 SUPPORT, PER QSI 035.
- 10) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 11) IT IS OPTIONAL TO SEAL EDGES OF SUPPORTS AND ABRASION STRIP USING SIKAFLEX 241/291 SEALANT.
- 12) TORQUE CLAMPS 80 TO 100 IN-LB.

SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 35305

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Ø0.323<sup>+0.005</sup><sub>-0.000</sub>  
(TYP 5 PLACES PER CUFF)  
HOLE TO BE ALIGNED WITHIN ±0.001 OF HOLE ON OTHER SIDE OF CUFF

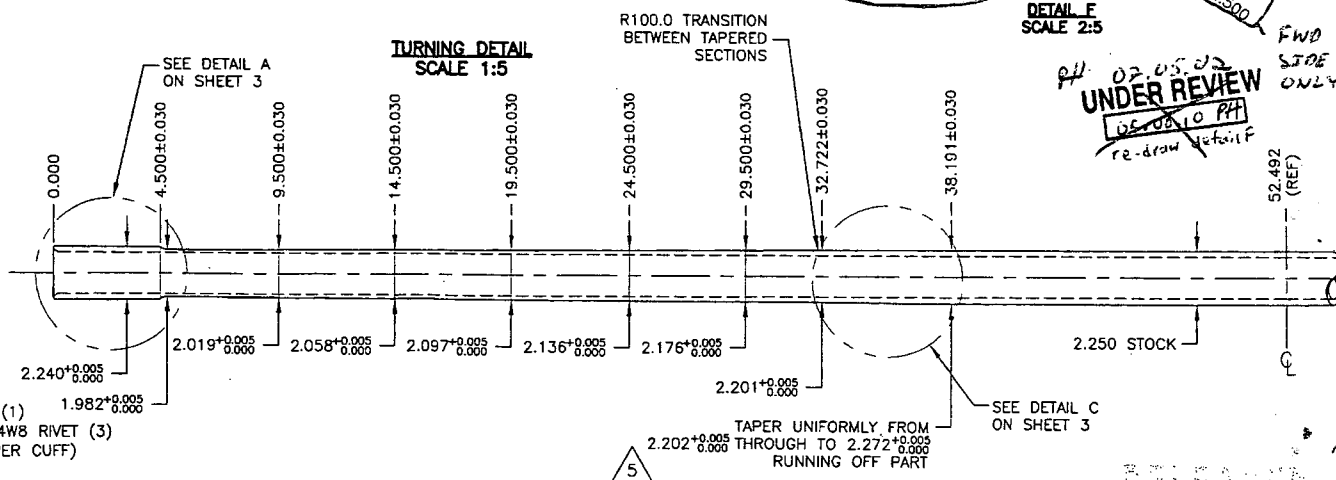
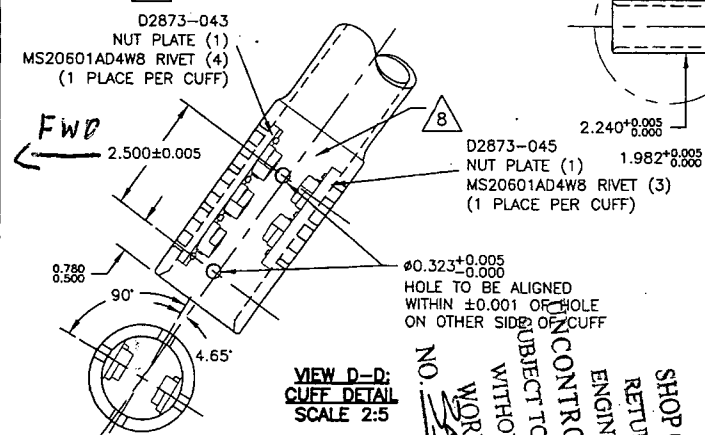
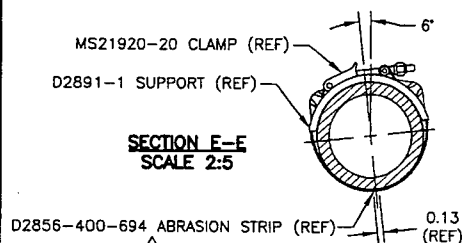
PILOT Ø0.128  
C'SINK Ø0.225X100'  
(TYP 7 PLACES PER CUFF)

FWD SIDE ONLY

**DETAIL F**  
SCALE 2:5

PH 02.05.02  
**UNDER REVIEW**  
05.08.10 PH  
re-draw detail F

FWD SIDE ONLY

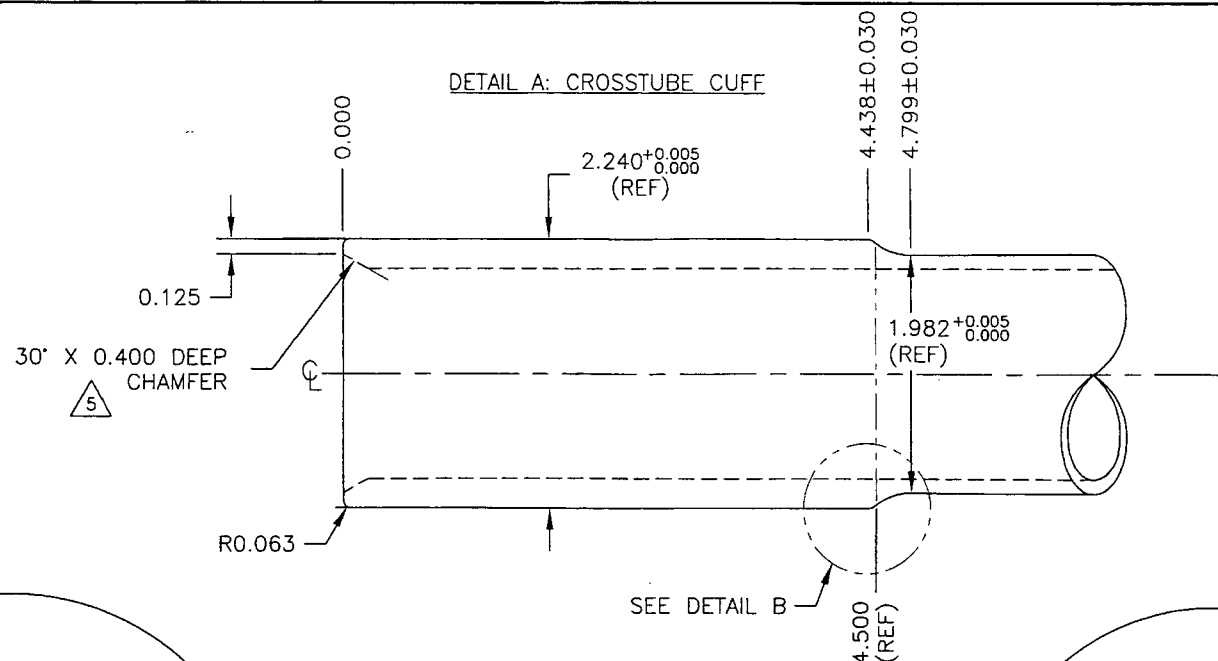


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DESIGN	DRAWN BY	DART	DART AEROSPACE LTD.
PH	PH		HAWTHORNE, ONTARIO, CANADA
CHECKED	APPROVED		
DS	OS		
DATE		DRAWING NO.	REV. B
05.07.26		D206-667-143	SHEET 2 OF 3
		TITLE	SCALE
		CROSSTUBE ASS'Y (206L HIGH FWD)	1:10

NO. 206-667-143  
WORK ORDER  
SUBJECT TO AMENDMENT  
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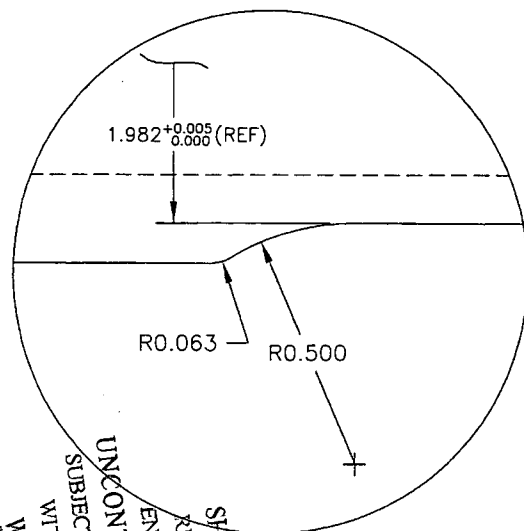
05.07.26 #

**UNDER REVIEW**

06.07.26 PH

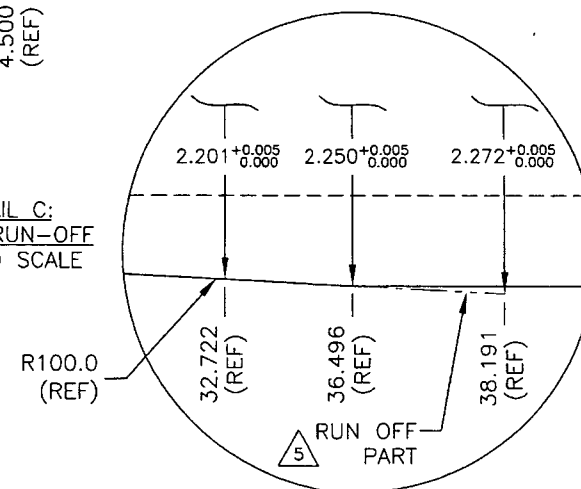
re-draw detail F

PH 07.05.02



DETAIL B: CUFF  
TRANSITION  
SCALE 4:1

DETAIL C:  
TAPER RUN-OFF  
NOT TO SCALE



NO. 35305

WORK ORDER

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DESIGN	PH	DRAWN BY	PH	<b>DART</b>	DART AEROSPACE LTD. HARRISBURG, ONTARIO, CANADA
CHECKED	PH	APPROVED	PH	DRAWING NO.	REV. B
DATE	05.07.26			D206-667-143	SHEET 3 OF 3
				TITLE	SCALE
				CROSSTUBE ASS'Y (206L HIGH FWD)	1:1

FROM SR-D206-667-2

FOR D206-667-143

	Cross tube	Damage Tolerance	O.D. (in)	I.D. (in)	Area (in <sup>2</sup> )	Inertia (in <sup>4</sup> )
A-A	Bell Fwd	0.000	2.250	1.750	1.571	0.798
	Bell Fwd w/ dam. tol.	0.005			1.566	0.791
B-B	Dart Fwd	0.000	2.250	1.750	1.571	0.798
	Dart Fwd w/ dam. tol.	0.015			1.495	0.751
	Bell Fwd	0.000	2.207	1.750	1.420	0.704
	Bell Fwd w/ dam. tol.	0.005			1.415	0.698
C-C	Dart Fwd	0.000	2.197	1.750	1.386	0.683
	Dart Fwd w/ dam. tol.	0.015	-0.004		1.310	0.638
	Bell Fwd	0.000	2.173	1.750	1.303	0.634
	Bell Fwd w/ dam. tol.	0.005			1.298	0.628
	Dart Fwd	0.000	2.162	1.750	1.266	0.612
	Dart Fwd w/ dam. tol.	0.015	-0.005		1.190	0.567
	Bell Fwd	0.000	2.139	1.750	1.188	0.567
	Bell Fwd w/ dam. tol.	0.005			1.183	0.561
D-D	Dart Fwd	0.000	2.130	1.750	1.158	0.550
	Dart Fwd w/ dam. tol.	0.015	-0.003		1.082	0.505
	Bell Fwd	0.000	2.105	1.750	1.075	0.503
	Bell Fwd w/ dam. tol.	0.005			1.070	0.498
E-E	Dart Fwd	0.000	2.099	1.750	1.055	0.492
	Dart Fwd w/ dam. tol.	0.015			0.979	0.448
	Bell Fwd	0.000	2.045	1.750	0.879	0.398
	Bell Fwd w/ dam. tol.	0.005			0.874	0.393
F-F	Dart Fwd	0.000	2.039	1.750	0.860	0.388
	Dart Fwd w/ dam. tol.	0.012			0.787	0.348
G-G	Bell Fwd	0.000	1.986	1.750	0.692	0.303
	Bell Fwd w/ dam. tol.	0.005			0.687	0.298
	Dart Fwd	0.000	1.982	1.750	0.680	0.297
	Dart Fwd w/ dam. tol.	0.012			0.607	0.258
H-H	Bell Fwd	0.000	2.250	1.750	1.571	0.798
	Bell Fwd w/ dam. tol.	0.005			1.566	0.791
	Dart Fwd	0.000	2.240	1.750	1.536	0.775
	Dart Fwd w/ dam. tol.	0.030			1.445	0.710

SECTION **	Cross tube	Bending Ultimate (lb*in)	Bending Yield (lb*in)	Tension Ultimate (lb)	Tension Yield (lb)	Shear Ultimate (lb)
A-A	Bell fwd w/ DT	46425	39391	103343	87685	65763
	Dart fwd w/ DT	51426	44375	115113	98668	61294
	Margin of Safety	0.11	0.13	0.11	0.13	-0.07
B-B	Bell fwd w/ DT	41755	35429	93408	79255	59442
	Dart fwd w/ DT	44691	38570	100859	86451	53704
	Margin of Safety	0.07	0.09	0.08	0.09	-0.10
C-C	Bell fwd w/ DT	38160	32378	85689	72705	54529
	Dart fwd w/ DT	40387	34859	91633	78542	48791
	Margin of Safety	0.06	0.08	0.07	0.08	-0.11
D-D	Bell fwd w/ DT	34649	29399	78089	66257	49693
	Dart fwd w/ DT	36541	31543	83327	71423	44369
	Margin of Safety	0.05	0.07	0.07	0.08	-0.11
E-E	Bell fwd w/ DT	31219	26489	70609	59911	44933
	Dart fwd w/ DT	32895	28398	75398	64627	40147
	Margin of Safety	0.05	0.07	0.07	0.08	-0.11
F-F	Bell fwd w/ DT	25360	21518	57702	48959	36719
	Dart fwd w/ DT	26286	22664	60614	51955	32275
	Margin of Safety	0.04	0.05	0.05	0.06	-0.12
G-G	Bell fwd w/ DT	19828	16824	45374	38499	28874
	Dart fwd w/ DT	20027	17271	46754	40074	24895
	Margin of Safety	0.01	0.03	0.03	0.04	-0.14
H-H	Bell fwd w/ DT	46425	39391	103343	87685	65763
	Dart fwd w/ DT	48829	42421	111242	95350	59233
	Margin of Safety	0.05	0.08	0.08	0.09	-0.10

ALL MARGINS ARE STILL POSITIVE.

PART OK

GP  
02.11.02





## LIQUID PENETRANT TEST REPORT

P - 1200 1

PAGE 1 OF 2

CLIENT	DART AEROSPACE	DATE	NOV 16 2007	TIME	AM <input type="checkbox"/> PM <input type="checkbox"/>
ATTENTION	LINDA LACELLE	ACUREN JOB NO.	188 07 1200		
ADDRESS	1270 ABERDEEN ST	POWOW No.	5068		
	HAWKESBURY, ONT.	WORK LOCATION	HAWKESBURY		
		ACCEPTANCE STD.	ASTM 1417/QSI-038	REV./DATE	2005
PROJECT	OH 58 FWD/AFT, 206LFWD/AFT, 407 HIGH AFT X TUBES				
ITEM(S) EXAMINED	JOB #S OH 58: 33146,33147,33148,33152,35532,35533,35534,35535. JOB#S 407: 33327				
	JOB #S 206L: 35043,35305,35306.				

JOB DESCRIPTION	PROCEDURE NO. LT-0002	REV./DATE	TECHNIQUE NO. LT-TECH2	REV./DATE
'PART No. D206667203/D206667103BL/D05876101,201/D407667205 MATERIAL ALODINED ALUM. THICKNESS				
SCOPE WET FLOURESCENT LIQUID PENETRANT INSPECTION CARRIED OUT ON 100% EXTERNAL SURFACE				

## TEST DETAILS

METHOD	<input checked="" type="checkbox"/> FLUORESCENT	<input type="checkbox"/> VISIBLE	<input checked="" type="checkbox"/> WATER WASH	<input type="checkbox"/> SOLVENT REMOVABLE	<input type="checkbox"/> POST EMULSIFIED
FAMILY BRAND	MAGNAFLUX		BLACK LGHT8171	<input type="checkbox"/> OUTPUT > 1000 $\mu$ W/cm <sup>2</sup>	<input type="checkbox"/> AMBIENT < 2 fc
PENETRANTZL67	MINIMUM DWELL TIME	45 MIN.	LIGHTING EQUIP.	<input type="checkbox"/> FLASHLIGHT	<input type="checkbox"/> TROUBLELIGHT
PENETRANT REMOVER H2O	MINIMUM DRY TIME	>10 MIN.	OTHER	CAL SEP 18 07	
DEVELOPER SKDS2	MINIMUM DWELL TIME	10 MIN.	LIGHT METER S/N	CAL DUE DATE	
DEVELOPER TYPE	<input checked="" type="checkbox"/> NON AQUEOUS	<input type="checkbox"/> AQUEOUS	<input type="checkbox"/> DRY		

## TEST SURFACE

SURFACE CONDITION	<input type="checkbox"/> AS GROUND	<input checked="" type="checkbox"/> AS WELDED	<input type="checkbox"/> MACHINED	<input type="checkbox"/> SHOT BLASTED	<input checked="" type="checkbox"/> CLEAN BARE METAL
SURFACE TEMPERATURE	<input type="checkbox"/> < - 4°C/ 20°F	<input type="checkbox"/> - 4°C/ 20°F TO 10°C/50°F	<input type="checkbox"/> 10°C/50°F TO 52°C/125°F	<input type="checkbox"/> > 52°C/125°F	

RESULTS- (☐ METRIC ☒ IMPERIAL)

FLUORESCENT LIQUID PENETRANT INSPECTION  
CARRIED OUT ON 100% EXTERNAL SURFACE ON:

206L FWD X TUBES JOB#S 35305  
206L AFT X TUBES JOB#S: 35043,35306  
OH58 FWD X TUBES JOB#S:33146,33147,33148,35532  
OH58 AFT X TUBES JOB#S: 33152,35533,35534,35535  
407 HIGH AFT TUBE JOB#: 33327

RESULTS: NO INDICATION OF DEFECTS.

ITEMS ACCEPTABLE TO STANDARD.

## Scope of Services

The agreement of Acuren Group Inc. to perform services extends only to those services provided for in writing. Under no circumstances shall such services extend beyond the performance of the requested services. It is expressly understood that all descriptions, comments and expressions of opinion reflect the opinions or observations of Acuren Group Inc. based on information and assumptions supplied by the owner operator and are not intended nor can they be construed as representations or warranties. Acuren Group Inc. is not assuming any responsibilities of the owner operator and the owner operator retains complete responsibility for the engineering, manufacture, repair and use decisions as a result of the data or other information provided by Acuren Group Inc. In no event shall Acuren Group Inc.'s liability in respect of the services referred to herein exceed the amount paid for such services.

## Standard of Care

In performing the services provided, Acuren Group Inc. uses the degree, care and skill ordinarily exercised under similar circumstances by others performing such services in the same or similar locality. No other warranty, expressed or implied, is made or intended by Acuren Group Inc.

## SIGNATURES

CLIENT REPRESENTATIVE		DTR # E 27347	
TECHNICIAN (SIGNATURE):		REPORT REVIEWED BY:	
NAME (PRINT):	JASON HEWETT	NAME INITIALS	
	1 <sup>ST</sup> TECHNICIAN	2 <sup>ND</sup> TECHNICIAN	
CGSB LEVEL	2	CGSB LEVEL	SNT LEVEL
CGSB REG. No	6156	CGSB REG. No	

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